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VOLUME TABLES FOR TREES OF INTERIOR ALASKA

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The attached volume tables are derived from 695 tree measurements obtained in 1957 and 1960. Nine general areas were sampled north and south of the Alaska Range and on the Kenai Peninsula. Data were gathered for white spruce (Picea glauca), quaking aspen (Populus tremuloides), paper birch (Betula papyrifera), and balsam poplar (Populus balsamifera), including black cottonwood (P. trichocarpa) to a limited extent. Most tree measurements came from randomly located 1/50-acre plots within stands comprising at least one acre of the same type and stand-size class.

Smalian's formula was used to determine cubic-foot volume of sample trees at least 5.0 inches d.b.h. (diameter breast high). Volume was found between a one-foot stump and a minimum merchantable top of 4.0 inches inside bark (d.i.b.). Points of measurement were generally at 8.15-foot intervals.

The International 1/4-inch rule and Scribner rule were used to find board-foot volume of sample trees in 16-foot logs. The minimum d.b.h. of sawtimber-size spruce was 9.0 inches; for hardwoods, 11.0 inches. Limits were from a one-foot stump to a top equaling 40 percent of d.b.h., but not less than 6.0 inches d.i.b. in spruce and 8.0 inches d.i.b. in hardwoods.

Initial plottings of volume classes over D^2H [1/] were linear over most of the range except those for paper birch cubic-foot and balsam poplar

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1/ The combined variable reported by Spurr where
D = d.b.h. in inches
H = total tree height in feet.
Spurr, Stephen H. Forest Inventory. 476 pp. New York: The Ronald Press Co. 1952.

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board-foot. These lines dropped slightly at the upper ends--zones of few data. Variability increased with increasing values of D^2H for all plottings. Since the standard deviation of residuals was proportional to volume and volume proportional to D^2H, the variance of residuals was proportional to $(D^2H)^2$. Therefore, $\frac{1}{(D^2H)^2}$ was used in weighting the equations. Independent variables tested were D^2H, D, D^2, $1/D^2$, and H.

Cubic-foot and board-foot tree volume equations for the four species were obtained by regression analyses[2/] [3/]. The F-test indicated that quaking aspen and paper birch data could be pooled. The best predictive equation is footnoted beneath each table in this report. Standard errors of estimate were approximated by (standard error of estimate, weighted form) $\sqrt{(D^2H)}$.

The table presented here with respect to paper birch cubic-foot volume differs from one published by Gregory[4/] in that: (1) paper birch and quaking aspen data were pooled herein; (2) volume was found by Smalian's formula, not graphically; and, (3) whole-inch d.b.h. classes (e.g., $5.0 \leq 5 < 6.0$), not mid-point classes (e.g., $4.6 \leq 5 < 5.6$) were used.

2/ Furnival, George M. Regression routines. Yale School of Forestry and Northeastern Forest Expt. Sta., 28 pp., mimeo. 1961

3/ Boles, James N. 40-series--stepwise regression system. Calif. Agr. Expt. Sta., Dept. of Agr. Econ., U. of Calif., Berkeley, 43 pp. dittoed. 1962.

4/ Gregory, Robert A. Cubic-foot volume tables for paper birch in Alaska. U. S. Forest Serv., Alaska Forest Res. Ctr., Tech. Note No. 49, 1 p. plus 4 tables. 1960.

Table 1.--Volume table for white spruce in Alaska [1]

(In cubic feet, by Smalian's rule)

D.b.h. D [2]	Total height, H (feet) [3]																			Basis: trees measured [4]
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	
Inches																				Number
5	1.2	1.6	1.9	2.2	2.5	2.9	3.2	3.5	3.8											18
6	2.0	2.5	2.9	3.4	3.8	4.3	4.7	5.2	5.6											21
7	2.9	3.5	4.1	4.7	5.3	5.9	6.5	7.1	7.7	8.4	9.0									20
8	3.9	4.7	5.5	6.2	7.0	7.8	8.6	9.4	10.1	10.9	11.7	12.5								29
9	5.0	6.0	7.0	8.0	8.9	9.9	10.9	11.8	12.8	13.8	14.7	15.7	16.7							27
10	6.3	7.5	8.7	9.9	11.1	12.2	13.4	14.6	15.8	17.0	18.1	19.3	20.5	21.6						26
11		9.2	10.6	12.0	13.4	14.8	16.2	17.6	19.1	20.5	21.9	23.3	24.7	26.1						23
12			12.7	14.3	16.0	17.6	19.3	21.0	22.6	24.3	26.0	27.6	29.3	31.0	32.6					14
13			14.8	16.8	18.7	20.7	22.6	24.5	26.5	28.5	30.4	32.3	34.3	36.3	38.2					21
14			17.2	19.5	21.7	24.0	26.2	28.4	30.7	32.9	35.1	37.4	39.7	41.9	44.1	46.3				14
15				22.3	24.9	27.5	30.0	32.6	35.2	37.7	40.2	42.8	45.4	48.0	50.5	53.0				11
16				25.4	28.3	31.2	34.1	37.0	39.9	42.8	45.7	48.6	51.5	54.4	57.3	60.2	63.1	66.0		8
17					31.9	35.2	38.5	41.7	45.0	48.3	51.5	54.8	58.1	61.3	64.6	67.8	71.1	74.3		7
18						39.4	43.0	46.7	50.4	54.0	57.6	61.3	65.0	68.6	72.3	75.9	79.6	83.2	86.8	2
19								51.9	56.0	60.1	64.1	68.2	72.3	76.3	80.4	84.4	88.5	92.5	96.5	5
20										66.5	70.9	75.4	79.9	84.4	88.9	93.3	97.8	102	107	1
21										73.2	78.1	83.0	87.9	92.9	97.8	103	108	113	118	2
22										80.2	85.6	91.0	96.4	102	107	112	118	123	129	1
23										87.5	93.4	99.3	105	111	117	123	129	135	140	--
24											102	108	114	121	127	134	140	146	153	1
25											110	117	124	131	138	145	152	159	166	--
26											119	126	134	142	149	156	164	171	179	--
27											128	136	144	152	160	168	176	184	193	--
28											137	146	155	164	172	181	190	198	207	--
29											148	157	166	175	185	194	203	212	222	--

1/ From weighted regression: $V = -0.69934 + 0.002,129,464,6\ D^2H$.
Standard error of estimate around mean volume ± 2.08 cu.ft. ± 9.7%; $R^2 = 0.983$.
Volume, inside bark, between a one-foot stump and a minimum merchantable top of 4.0 inches inside bark.

2/ Whole-inch class (e.g., $11.0 \leq 11 < 12.0$)

3/ Mid-point class (e.g., $57.6 \leq 60 < 62.6$)

4/ Lines contain basic data for 251 trees at least 5.0 inches d.b.h.

Table 2.--Volume table for white spruce in Alaska [1]

(In board feet, International 1/4-inch)

D.b.h. D [2] (inches)	Total height, H (feet) [3]																		Basis: trees measured [4] (number)
	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	
9	13	20	26	32	38	44	51	57	63	69	75	82							27
10	16	24	31	39	46	54	62	69	77	84	92	99	107						26
11	21	31	40	49	58	67	76	85	94	103	112	121	130						23
12		40	51	61	72	83	93	104	115	126	136	147	158	168					14
13		50	63	76	88	101	113	126	138	151	163	176	188	201					21
14		63	78	93	107	121	136	150	165	179	193	208	222	236	251				14
15			94	111	128	144	160	177	193	210	226	242	259	275	292	308			11
16			113	131	150	169	187	206	224	243	262	280	299	318	336	355	373		8
17				153	174	195	216	237	258	279	300	321	342	363	384	404	425		7
18					200	223	247	270	294	317	340	364	387	410	434	457	481	504	2
19							280	306	332	358	384	410	436	462	488	514	540	566	5
20									372	400	429	458	487	515	544	573	602	631	1
21									414	446	477	509	541	572	603	635	667	698	2
22									458	493	528	563	597	631	666	701	735	770	1
23									505	543	581	618	656	694	732	769	807	845	--
24										594	636	677	718	759	800	841	882	923	1
25										649	694	738	782	826	871	916	960	1,005	--
26										705	753	801	849	897	946	994	1,042	1,090	--
27										764	816	868	920	971	1,023	1,074	1,126	1,178	--
28										825	881	936	991	1,047	1,102	1,158	1,213	1,269	--
29										888	948	1,007	1,066	1,126	1,185	1,245	1,304	1,364	--

1/ From weighted regression: $V = -67.1116 + 0.013,663,011\ D^2H + 3344.33/D^2$
Standard error of estimate around mean volume $\doteq$ 19.2 bd. ft. $\doteq$ 12.1%; $R^2 = 0.951$.
Volume, in 16-foot logs, between a one-foot stump and a merchantable top equal to 40% of d.b.h. but not less than 6.0 inches inside bark.

2/ Whole-inch class (e.g., $11.0 \leq 11 < 12.0$).

3/ Mid-point class (e.g., $57.6 \leq 60 < 62.6$).

4/ Lines contain basic data for 162 trees at least 9.0 inches d.b.h.

Table 3.--Volume table for white spruce in Alaska [1/]

(In board feet, Scribner)

D.b.h. D [2/]	Total height, H (feet) [3/]																		Basis: trees measured [4/]
	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	
Inches																			Number
9		(10)	(16)	(21)	(26)	(30)	40	(44)	(47)	(50)	(53)	(56)	(59)						27
10		(13)	(20)	(28)	(35)	(42)	49	52	55	58	61	64	67	70					26
11		(16)	(26)	(34)	(42)	(51)	59	64	69	74	80	85	90	95					23
12			(31)	(42)	54	62	69	77	84	92	100	107	115	123	130				14
13			(36)	50	60	70	80	91	101	111	122	132	142	152	163				21
14			40	54	67	80	93	106	119	132	145	158	171	184	198	211			14
15				58	74	90	106	122	138	154	170	187	203	219	235	251	267		11
16				62	81	101	120	139	159	178	197	217	236	256	275	294	314	333	8
17					89	112	135	158	180	203	226	249	272	294	317	340	363	386	7
18						124	150	177	203	230	256	283	309	336	362	388	415	441	468	2
19								197	228	258	288	318	349	379	409	440	470	500	530	5
20										288	322	356	390	425	459	494	528	562	597	1
21										319	357	396	434	473	512	550	589	627	666	2
22										351	394	437	480	523	566	609	652	695	738	1
23										385	433	480	528	576	624	671	719	767	814	--
24											473	526	578	631	683	736	788	841	894	1
25											515	573	630	688	746	803	861	918	976	--
26											559	622	685	748	810	873	936	999	1,062	--
27											604	673	741	809	878	946	1,014	1,083	1,151	--
28											652	726	800	873	947	1,021	1,095	1,169	1,243	--
29											700	780	860	940	1,020	1,100	1,179	1,259	1,339	--

1/ From weighted regression: $V = 98.7701 + 0.02022\ D^2H - 0.77651\ D^2 - 1.63023\ H$

Standard error of estimate around mean volume ≐ 19.6 bd. ft. ≐ 14.8%

Volume, in 16-foot logs, between a one-foot stump and a merchantable top equal to 40% of d.b.h. but not less than 6.0 inches inside bark.

2/ Whole-inch class (e.g., $11.0 \leq 11 < 12.0$)

3/ Mid-point class (e.g., $57.6 \leq 60 < 62.6$)

4/ Lines contain basic data for 162 trees at least 9.0 inches d.b.h. Volumes in parentheses hand adjusted.

Table 4.--Volume table for quaking aspen and paper birch in Alaska [1]

(In cubic feet, by Smalian's rule)

D.b.h., D [2]	Total height, H (feet) [3]											Basis: trees measured [4]
	30	35	40	45	50	55	60	65	70	75	80	Aspen/birch
Inches												Number
5	1.0	1.3	1.7	2.0	2.3	2.7	3.0	3.3				18/5
6	1.8	2.2	2.7	3.2	3.7	4.1	4.6	5.1	5.5	6.0		13/24
7	2.7	3.3	4.0	4.6	5.2	5.8	6.4	7.1	7.7	8.3		23/20
8	3.8	4.5	5.4	6.2	7.0	7.8	8.6	9.4	10.2	11.0		22/15
9		5.9	7.0	8.0	8.9	9.9	10.9	11.9	12.9	13.9	14.9	27/17
10		7.5	8.7	9.9	11.2	12.4	13.6	14.8	16.0	17.2	18.4	15/15
11			10.6	12.1	13.6	15.0	16.5	18.0	19.4	20.9	21.4	12/13
12				14.5	16.2	18.0	19.7	21.4	23.1	24.8	26.6	13/3
13					19.1	21.1	23.1	25.1	27.1	29.1	31.1	4/4
14					22.2	24.5	26.8	29.1	31.4	33.8	36.1	6/3
15					25.5	28.1	30.8	33.4	36.1	38.7	41.4	1/2
16					29.0	32.0	35.0	38.0	41.0	44.0	47.0	-/7
17						36.1	39.5	42.9	46.2	49.6	53.0	-/5
18						40.5	44.2	48.0	51.8	55.6	59.4	-/3
19						45.1	49.3	53.5	57.7	61.8	66.0	-/1
20							54.6	59.2	63.8	68.5	73.1	--
21							60.1	65.2	70.3	75.4	80.5	--
22							66.0	71.5	77.1	82.7	88.2	--

1/ From weighted regression: $V = -1.024,11 + 0.002,203,407,5\ D^2H$.
Standard error of estimate around mean volume $\doteq$ 1.71 cu.ft. $\doteq$ 13.8%; $R^2 = 0.960$.
Volume, inside bark, between a one-foot stump and a minimum merchantable top of 4.0 inches inside bark.

2/ Whole-inch class (e.g., $11.0 \leq 11 < 12.0$).

3/ Mid-point class (e.g., $57.6 \leq 60 < 62.6$).

4/ Lines contain basic data for 154 aspen and 147 birch at least 5.0 inches d.b.h.

Table 5.--Volume table for quaking aspen and paper birch in Alaska [1/]

(In board feet, International 1/4-inch)

D.b.h., D [2/]	Total height, H (feet) [3/]									Basis: trees measured [4/]
	40	45	50	55	60	65	70	75	80	Aspen-birch
Inches										Number
11	33	41	49	57	65	73	81	88	96	12/13
12		54	63	73	82	91	101	110	119	13/3
13			79	90	100	111	122	133	144	4/4
14			96	109	121	133	146	158	171	6/3
15			113	128	142	156	171	185	199	1/2
16			132	149	165	181	197	214	230	-/7
17				171	189	208	226	244	262	-/5
18				194	215	235	256	276	296	-/3
19					242	265	287	310	322	-/1
20					271	296	321	346	371	--
21					301	328	356	383	411	--
22					332	362	392	423	455	--

1/ From weighted regression: $V = -29.8848 + 0.011{,}913{,}084\ D^2H$
Standard error of estimate around mean volume ≐ 25.4 bd. ft. ≐ 21.1%;
$R^2 = 0.806$.
Volume, in 16-foot logs, between a one-foot stump and a merchantable top equal to 40% of d.b.h. but not less than 8.0 inches inside bark.

2/ Whole-inch class (e.g. $11.0 \leq 11 < 12.0$).

3/ Mid-point class (e.g. $57.6 \leq 60 < 62.6$).

4/ Lines contain basic data for 36 aspen and 41 birch at least 11.0 inches d.b.h.

Table 6.--Volume table for quaking aspen and paper birch in Alaska [1/]

(In board feet, Scribner)

D.b.h. D [2/]	Total height, H (feet) [3/]									Basis: trees measured [4/]
	40	45	50	55	60	65	70	75	80	aspen/birch
Inches										Number
11	26	32	39	45	52	58	65	72	78	12 / 13
12		43	51	58	66	74	82	89	97	13 / 3
13			64	73	82	91	100	109	118	4 / 4
14			77	88	98	109	119	130	140	6 / 3
15			92	104	116	128	140	152	164	1 / 2
16			108	122	135	149	162	176	190	- / 7
17				140	156	171	186	201	217	- / 5
18				160	177	194	211	228	245	- / 3
19					200	219	238	257	276	- / 1
20					224	245	266	286	307	- / -
21					249	272	295	318	341	- / -
22					275	300	325	351	376	- / -

1/ From weighted regression: $V = -27.163 + .00995\ D^2H$. Standard error of estimate around mean volume ≐ 21.0 bd. ft. ≐ 21.2%. Volume, in 16-foot logs, between a one-foot stump and a merchantable top equal to 40% of d.b.h. but not less than 8.0 inches inside bark.

2/ Whole-inch class (e.g., $11.0 \leq 11 < 12.0$)

3/ Mid-point class (e.g., $57.6 \leq 60 < 62.6$)

4/ Lines contain basic data for 36 aspen and 41 birch at least 11.0 inches d.b.h.

Table 7.--Volume table for balsam poplar in Alaska [1/]

(In cubic feet, by Smalian's rule)

D.b.h. D [2/]	Total height, H (feet) [3/]																			Basis: trees measured [4/]
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	
Inches																				Number
5	0.8	1.1	1.3	1.6	1.9	2.2	2.4	2.7												3
6	1.4	1.8	2.2	2.6	3.0	3.4	3.7	4.1	4.5											5
7	2.2	2.7	3.2	3.7	4.2	4.8	5.3	5.8	6.3	6.8										4
8	3.0	3.7	4.4	5.0	5.7	6.4	7.0	7.7	8.3	9.0	9.6	10.3								7
9		4.9	5.7	6.5	7.3	8.1	9.0	9.8	10.6	11.4	12.2	13.0								8
10		6.1	7.1	8.1	9.1	10.1	11.1	12.1	13.1	14.1	15.1	16.2								15
11		7.5	8.7	9.9	11.1	12.3	13.5	14.7	15.9	17.1	18.3	19.5	20.7	21.9						7
12		9.0	10.5	11.9	13.3	14.7	16.1	17.6	19.0	20.4	21.8	23.2	24.6	26.1						10
13		10.7	12.4	14.0	15.7	17.3	19.0	20.6	22.3	23.9	25.6	27.2	28.9	30.5	32.2	33.8	35.5	37.1		5
14				16.3	18.2	20.1	22.0	23.9	25.8	27.7	29.6	31.5	33.4	35.4	37.3	39.2	41.2	43.1		6
15				18.7	20.9	23.1	25.3	27.4	29.6	31.8	34.0	36.2	38.3	40.5	42.7	44.9	47.0	49.2		8
16				21.2	23.7	26.2	28.7	31.2	33.7	36.2	38.6	41.1	43.6	46.0	48.5	51.0	53.4	55.9		5
17					26.9	29.7	32.4	35.2	38.0	40.8	43.6	46.3	49.1	51.9	54.6	57.4	60.2	63.0		6
18						33.3	36.4	39.5	42.6	45.7	48.8	51.9	55.0	58.1	61.2	64.3	67.4	70.5	73.6	7
19						37.0	40.5	43.9	47.4	50.8	54.3	57.7	61.2	64.6	68.1	71.5	74.9	78.4	81.8	4
20							44.8	48.6	52.4	56.2	60.1	63.9	67.7	71.5	75.3	79.1	82.9	86.7	90.5	7
21							49.4	53.6	57.8	62.0	66.2	70.3	74.5	78.7	82.9	87.1	91.3	95.5	99.7	3
22							54.2	58.8	63.4	68.0	72.5	77.1	81.7	86.3	90.9	95.5	100	105	109	3
23							59.2	64.2	69.2	74.2	79.2	84.2	89.2	94.2	99.2	104	109	114	119	--
24									75.3	80.7	86.2	91.6	97.0	102	108	113	119	124	130	3
25									81.6	87.5	93.4	99.3	105	111	117	123	129	135	141	3
26									88.2	94.6	101	107	114	120	126	133	139	146	152	5
27									95.0	102	109	116	122	129	136	143	150	157	164	2
28									103	110	117	124	131	139	146	154	161	168	176	2
29										117	125	133	141	149	157	165	173	180	188	--
30											134	142	151	159	167	176	184	193	201	3
31											143	152	161	170	179	188	197	206	215	--
32											152	162	171	181	190	200	210	219	229	--
33											162	172	182	192	202	212	223	233	243	--
34											172	182	193	204	215	226	236	247	258	--

1/ From weighted regression: $V = -0.8722 + 0.001{,}811{,}522\ D^2H$.
Standard error of estimate around mean volume ≐ 4.30 cu. ft. ≐ 10.1%; $R^2 = 0.986$.
Volume, inside bark, between a one-foot stump and a minimum merchantable top of 4.0 inches inside bark.

2/ Whole-inch class (e.g. $11.0 \leq 11 < 12.0$).

3/ Mid-point class (e.g. $57.6 \leq 60 < 62.6$).

4/ Lines contain basic data for 131 trees at least 5.0 inches d.b.h.

Table 8.--Volume table for balsam poplar in Alaska [1/]

(In board feet, International 1/4-inch)

D.b.h., D [2/]	Total height, H (feet) [3/]																	Basis: trees measured [4/]
	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	
Inches																		Number
11	9	16	23	31	38	45	52	60	67	74	82	89						7
12	19	28	36	45	54	62	71	79	88	96	105	113						10
13	31	41	51	61	71	81	91	101	111	121	131	141	151	161	171	181		5
14		55	67	78	89	101	112	123	135	147	158	170	181	193	205	216		6
15		70	83	96	109	122	135	148	161	174	188	201	214	227	231	244		8
16		85	100	115	130	145	160	174	189	204	219	234	249	264	279	294		5
17			118	135	152	169	186	203	219	236	253	270	286	303	320	337		6
18				157	176	194	213	232	251	269	288	307	326	344	363	382	401	7
19				180	201	222	242	263	284	305	326	346	367	388	409	430	451	4
20					227	250	273	296	319	342	365	388	411	434	457	480	502	7
21					255	280	305	330	356	381	406	431	457	482	508	533	558	3
22					283	311	339	366	394	422	449	477	505	533	561	588	616	3
23					313	343	374	404	434	465	495	525	556	586	616	646	676	--
24							411	444	476	509	542	575	608	641	674	706	739	3
25							449	485	520	556	592	627	663	699	734	769	805	3
26							489	527	566	604	643	682	720	758	796	835	873	5
27							530	572	613	654	696	737	779	820	861	902	944	2
28							573	618	662	706	751	796	840	884	928	973	1,018	2
29								665	713	760	808	855	903	951	999	1,046	1,094	--
30									765	816	867	918	969	1,020	1,071	1,122	1,173	3
31									820	874	928	982	1,036	1,091	1,145	1,200	1,254	--
32									876	933	991	1,049	1,107	1,165	1,223	1,280	1,338	--
33									933	995	1,056	1,117	1,179	1,240	1,302	1,363	1,425	--
34									993	1,058	1,123	1,188	1,254	1,319	1,384	1,449	1,514	--

1/ From weighted regression: $V = -49.1199 + 0{,}010{,}941{,}441\ D^2H$.
Standard error of estimate around mean volume ≐ 47.7 bd. ft. ≐ 15.2%; $R^2 = 0.954$.
Volume, in 16-foot logs, between a one-foot stump and a merchantable top equal to 40% of d.b.h. but not less than 8.0 inches inside bark.

2/ Whole-inch class (e.g., $11.0 \leq 11 < 12.0$).

3/ Mid-point class (e.g. $57.6 \leq 60 < 62.6$).

4/ Lines contain basic data for 89 trees at least 11.0 inches d.b.h.

Table 9.--Volume table for balsam poplar in Alaska [1/]

(In board feet, Scribner)

D.b.h. D [2/] (Inches)	Total height, H (feet) [3/]																	Basis: trees measured [4/] (Number)
	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	
11	4	10	16	23	29	35	42	48	54	61	67	73						7
12	13	20	28	35	43	50	58	65	73	80	88	95						10
13	23	32	40	49	58	66	75	84	93	101	110	119	128	136	145	154		5
14		44	54	64	74	84	94	104	114	124	134	144	154	164	174	184		6
15		57	68	80	91	102	114	126	137	148	160	172	183	194	206	217		8
16		70	83	96	109	122	135	148	162	174	188	200	214	226	240	253		5
17			100	114	129	144	158	173	188	202	217	231	246	261	275	290		6
18				133	150	166	182	199	215	231	248	264	280	297	313	330	346	7
19				153	171	190	208	226	244	262	280	299	317	335	353	371	390	4
20					194	214	234	255	275	295	315	335	355	375	395	415	435	7
21					218	240	263	285	307	329	351	373	395	417	439	462	484	3
22					244	268	292	316	340	365	389	413	437	461	486	510	534	3
23					270	296	323	349	376	402	428	454	481	508	534	560	587	---
24							355	384	412	441	470	498	527	556	584	613	642	3
25							388	420	451	482	513	544	575	606	637	668	699	3
26							423	457	490	524	558	591	625	658	692	725	759	5
27							459	496	532	568	604	640	676	712	748	785	821	2
28							497	536	574	613	652	691	730	769	807	846	885	2
29								577	619	660	702	744	785	827	868	910	952	---
30									665	709	754	798	843	887	932	976	1,020	3
31									712	760	807	854	902	949	997	1,044	1,092	---
32									761	812	862	912	963	1,014	1,064	1,114	1,165	---
33									812	865	919	972	1,026	1,080	1,133	1,187	1,241	---
34									864	920	977	1,034	1,091	1,148	1,205	1,262	1,319	---

1/ From weighted regression: $V = -46.7415 + 0.00956\ D^2H$

Standard error of estimate around mean volume ≐ 40.1 bd. ft. ≐ 14.6%

Volume, in 16-foot logs, between a one-foot stump and a merchantable top equal to 40% of d.b.h. but not less than 8.0 inches inside bark.

2/ Whole-inch class (e.g. 11.0 ≤ 11 <12.0)

3/ Mid-point class (e.g. 57.6 ≤ 60 <62.6)

4/ Lines contain basic data for 89 trees at least 11.0 inches d.b.h.

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